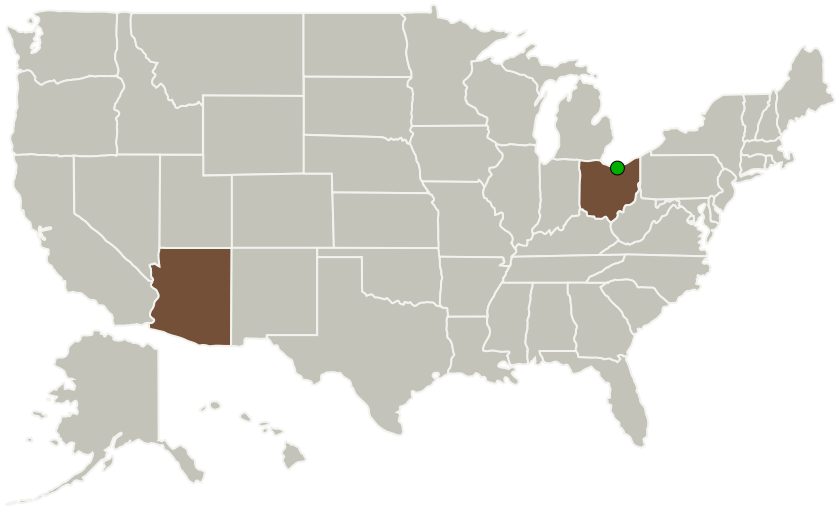
Novel Active Combustion Control Concept for High-Frequency Modulation of Atomized Fuel Flow, Phase II

Completed Technology Project (2011 - 2013)

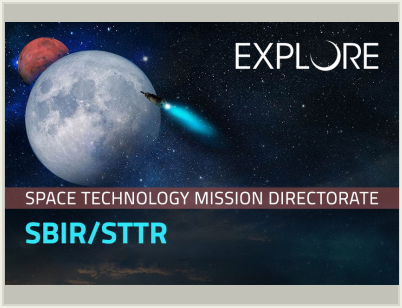
Project Introduction

This proposal by Jansen's Aircraft Systems Controls, Inc. presents an innovative solution for Active Combustion Control. Relative to the state of the art, this concept has the ability to provide frequency modulation (greater than 1000[Hz]) in combination with high amplitude modulation (in excess of 30% flow) and can be adapted to a large range of fuel injector sizes. Existing state-of-the-art valves tend to have low flow modulation strength or the size of the valves with higher flow modulation seem too large or consume too much electrical power to be practical. The proposed Active Combustion Control valve has high frequency and amplitude modulation, consumes low electrical power, is closely coupled with the fuel injector for modulation strength, and is practical in size and weight.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Jansen's Aircraft Systems Controls, Inc.	Lead Organization	Industry	Tempe, Arizona
Glenn Research Center(GRC)	Supporting Organization	NASA Center	Cleveland, Ohio



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Primary U.S. Work Locations	
Arizona	Ohio

Project Transitions

June 2011: Project Start

November 2013: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/139177)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Jansen's Aircraft Systems Controls, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

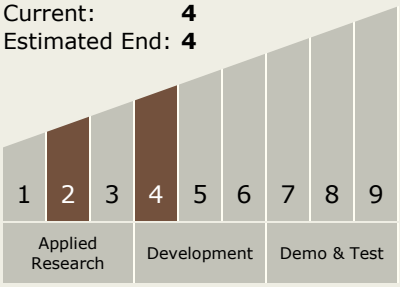
Carlos Torrez

Principal Investigator:

Matt Caspermeyer

Technology Maturity (TRL)

Start: **2**
Current: **4**
Estimated End: **4**



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Completed Technology Project (2011 - 2013)

Technology Areas

Primary:

- TX01 Propulsion Systems
  - TX01.1 Chemical Space Propulsion
    - TX01.1.1 Integrated Systems and Ancillary Technologies

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System